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How Portuguese consumers evaluate packages of OTC medicines

Author(s): Cântara, Sónia; Kauppinen-Räisänen, Hannele; Sá, Daniel

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Como avaliam os consumidores de automedicação as embalagens de medicamentos não sujeitos a receita médica

País de origem, reputação do fabricante, medicamentos não sujeitos a receita médica, embalagem, design da embalagem, consumidores de autocuidado

How Portuguese consumers evaluate packages of OTC medicines

Country of origin, producer reputation, OTC medicines, packaging, packaging design, self-care consumers

Sónia Cântara, Hannele Kauppinen-Räsänen, Daniel Sá

Resumo

O setor farmacêutico tem sofrido transformações e tem transformado a saúde e o comportamento do consumidor. É esperado que o consumidor assuma o controlo da própria saúde, o que inclui a auto-medicação. O aumento da oferta de medicamentos não sujeitos a receita médica e o seu acesso fora das farmácias têm também contribuído para esta situação. O desafio da situação atual prende-se com o facto do consumidor fazer, cada vez mais, as suas escolhas de marcas sem aconselhamento profissional. Em resposta a isto, o estudo visa explorar como estes consumidores avaliam as embalagens dos medicamentos não sujeitos a receita médica. O estudo é executado entre os consumidores portugueses e foca-se num determinado número de características presentes nas embalagens. Com a abordagem mencionada o estudo procura contribuir dando algumas luzes sobre o efeito do design da embalagem, o que pode fornecer perceções valiosas tanto para os investigadores como para o setor.

Abstract

Recent transformations in the healthcare industry reflect changing consumer health and self-care behaviours. The consumer is now expected to take control of his or her own health, including self-medication. The increasing number of non-prescription medicines, as well as their availability in non-pharmaceutical shops, has also contributed to the current situation. One challenge of this scenario is that consumers increasingly make their brand choices without professional advice. In response to this, the present study aims to explore how consumers evaluate the packages of OTC medicines. A mixed method (conjoint analysis and semi-structured interviews) study was designed. The study was executed among Portuguese consumers and focused on a number of cues expressed on brand packaging such as COO, producer and packaging colour. With this approach, we attempt to shed some light on the effect of packaging design, which may provide valuable insight to both researchers and packaging designers as well as other professionals in the pharmaceutical industry.

1. Introduction

Over time, the governmental actions related to healthcare has changed, whereby the healthcare market and industry have gone through a number of changes and continues to undergo transformation (e.g. Athavale et al., 2013).

One essential aspect characterising the transformation relates to the individual, as there has been a shift in focus toward home self-care. Self-care is defined as any action undertaken by the individual in favour of one's personal well-being. This includes by definition both curative and preventive actions for maintaining and re-establishing one's health. So in the contemporary era of health empowerment, consumers are increasingly expected to take responsibility for their health, while at the same time, they seemingly also wish to have greater control over their own health (Korenda et al., 2016).

One action characterising self-care is self-medication, or the self-administration of substances to cure minor illnesses and ailments. In this action, the decision maker is not the pharmacist, the doctor or the physician, but the consumer herself, which implies that she is empowered to take on the responsibility of practicing self-medication (e.g. Taher et al., 2012).

Another aspect characterising the transformation of the healthcare industry relates to the access of medicines. These medicines or substances are referred to as over-the-counter (OTC) pharmaceuticals; they are substances like cough and cold preparations, vitamins and minerals and analgesics. They are also defined as non-prescription pharmaceuticals that can be purchased without a prescription from a doctor or a physician (de Lorme et al., 2010; "OTC pharmaceuticals in Europe," 2016). The number of OTC medicines has been growing, as the healthcare industry has strived to provide means for self-care (Brody, 2015). This is realized as prescription medicines have been converted to non-prescription medicines. In addition, affordable medications are being increasingly provided to consumers, who now can control and manage such medications on their own. Moreover, generic forms are allowed today.

An additional aspect concerning the ongoing transformation relates to the distribution of medicines. Namely, the non-prescription medicines are increasingly available in supermarkets, groceries and other types of stores, such as online stores, as well as in pharmacies. This means that not only has the number of medicines increased, but also, the availability of non-prescription medicines has expanded.

The transformation does not come without challenges. The fact is that although the healthcare market is in general very competitive (de Lorme et al., 2010), a specific feature of the healthcare industry is the rigorous marketing laws that restrict the industry. This means that the promotion of medicines is limited and therefore relatively non-existent. Although, the increase in the number of OTC medicines has opened the door for direct-to-consumer marketing activities (de Lorme et al., 2010), the marketing activities undertaken by companies are still restricted by laws. From a marketing perspective, businesses are restricted with regard to the types of marketing activities in which they can participate to promote their brand to the consumer market. This means that while informative activities that aim at consumers' ability for cognitive information processing are allowed in some countries, activities that influence consumers at the unconscious and emotional level are explicitly forbidden. Hence, it appears that these laws are based on the underlying assumption that consumers behave rationally when they choose OTC pharmaceuticals or, in other words, that they make such brand choices based on cognitive product evaluations (e.g. Bernardini et al., 2003; Kauppinen-Räsänen, 2014).

The present study focuses on consumers' choices of OTC medicines and, in particular, on the impact of packaging on such choices, with the focal point being different cues expressed on the packaging. Related to that this study is based on a number of premises related to packaging and consumer choices. First, the presumption is that OTC products are packaged. This means that the packaging is designed and includes a number of verbal cues (like producer and country-

of-origin), numerical cues (like price) and design cues (like shape and colour) (Fernqvist et al., 2015; Kauppinen-Räisänen, 2014; Panthin-Sohier, 2009).

The second presumption of this study is that most consumers make their purchasing decisions in stores at the point of purchase. This has been proven for many consumer goods, whereby consumers have been shown to make 70% of their brand choices at the point of purchase (Inman et al., 2009). With regard to consumer goods, the finding by Inman et al. (2009) implies that consumers' brand choices are not solely based on rational or cognitive product evaluations. This evaluation would imply that brand choices would be based on intrinsic product cues or other product-related information provided, for example, in-store or product evaluations under the guidance of pharmacists or other professionals. Yet, the finding also implies, in the case of the current study, that although consumers may be brand loyal when it comes to pharmaceuticals, they may seek variety in their choices (Paddison & Olsen, 2008; "OTC choices", 2013). In fact, it has been reported that also brand choices of OTC medicines are in some cases based on in-store browsing ("OTC medicines", 2013). So browsing may indeed indicate that also self-care consumers seek for variety and that their brand choices of OTC medicines are made at the point of purchase.

Third, this study is based on the premise that emotional decisions are prevalent. This is supported by the finding that, for consumer goods, 90% of consumers make brand choices based on the appearance of the packaging (Orth et al., 2010) or, in other words, by visually (using design cues) examining the packages of different brands. Hence, if consumers—for many other consumer goods—chose brands based on packaging, it seems reasonable to assume that packaging has an impact in the case of healthcare products as well (Kauppinen-Räisänen et al., 2012; Paddison & Olsen, 2008).

In reference to the discussion above, past research has acknowledged the influence of the packaging of consumer goods—referred to as the silent salesman promoting the brand (e.g. Kauppinen-Räisänen & Uusitalo, 2015; Rundh, 2014; Söderlund et al., 2017; Wilkins et al., 2016), but the impact of OTC pharmaceutical packaging has hardly been covered in marketing research. One of the few published studies are those by Kauppinen-Räisänen (2010) exploring the impact of packaging of non-prescription medicines among Finnish consumers, Kauppinen-Räisänen (2011) investigating the impact of packaging among senior consumers and Kauppinen-Räisänen et al. (2012) studying OTC packaging as a means of brand salience in a three-country study. These studies show that packaging cues are country-related. In conclusion, past studies stress that there is a need for studies focusing on issues related to selling and promoting OTC pharmaceuticals and at explaining the impact of OTC packaging on consumer preferences. In addition, there is a call for research in the context of various countries (e.g. Kauppinen-Räisänen, 2010; 2011; Kauppinen-Räisänen et al., 2012; Mukherjee, 2012).

Against the previous backdrop, this study aims to explore how self-care consumers evaluate the packaging of OTC pharmaceuticals. The study was conducted among Portuguese consumers and includes two product classes (cough medicine and painkiller). Specifically, the study aims to answer the following research questions:

- 1) What is the impact of packaging design cues on consumers' packaging preferences?
- 2) What explains the impact of verbal and design cues on consumers' packaging preferences?
- 3) Is the impact of packaging cues context-related (e.g. country-context)?

With the aforementioned approach, the study intends to provide empirical-based insights of the impact of product and design cues expressed on packaging in context. In addition, the study contributes to fields of packaging design and pharmaceutical marketing by providing insights into the role of packaging design in the brand choices of self-care consumers, both in general and in the particular context of Portugal.

2. Conceptual Framework

This study's design is based on the cue utilisation theory, according to which products and brands consist of a number of extrinsic and intrinsic cues, many of which are expressed on the packaging and, therefore, create an impression of the product and the supporting branding. Hence, the consumer may use these cues—intentionally and unintentionally—to evaluate the product and the brand, to state their brand preference and to make a choice (Olson & Jacoby, 1972; Kukar-Kinney and Xia, 2017; Langan et al., 2017).

2.1. Consumer choices of high-risk products

The current trend in caretaking appears to be moving towards home self-care. Yet, the era of health empowerment involves some challenges with regard to consumers' brand choices and self-care behaviour.

To begin with, consumers' choices of OTC medicines is characterised by the perceived risk of using such medication (Paddison & Olsen, 2008). That is, consumer choice behaviour faces the challenge of medicines being perceived as carrying a higher risk than many other consumer goods. This is particularly true as healthcare products are associated with one's health, and therefore, convey physical risk (e.g. Bettman, 1972; Mortanges et al., 1997; Paddison & Olsen, 2008). In addition, non-prescription products for specific types of illnesses are often similar in formulation, and this is a challenge for self-care behaviour, as consumers find it difficult to identify the differences between various products in a product class. In other words, consumers face a challenge to evaluate differences between branded products based on their intrinsic product cues. These cues are the inherent characteristics in the product like active ingredient or taste of the medicine. Hence, choices of OTC pharmaceuticals may be based on habitual behaviours, such as brand loyalty, past experiences, pharmacist consultation, or extensive information searching behaviours such as information sourcing on the Internet (e.g. Bettman, 1979; "OTC choices", 2013; Paddison & Olsen, 2008; Sleath et al., 2001). Although, it has been reported that consumers read product related information before a brand choice ("OTC choices", 2013), research implies that consumers suffer from product illiteracy in the context of pharmaceuticals (e.g. Fincham, 2013). This means that consumers face challenges in interpreting and understanding product information for medicines.

Taking into account the increasing number of OTC products, that preferred brand may not always be in stock, and that pharmacists are not always available for consultation, the question remains 'What are self-care consumer OTC pharmaceutical choices based on?'

In order to be able to choose a brand in such cases, consumers may rely on differences between the brands based on the intrinsic cues like active ingredient and taste, or extrinsic cues such as brand name and price. In contrast to intrinsic cues, extrinsic cues may vary for the same core product and they may be changed without changing the product itself (Olson & Jacoby, 1972). In addition to extrinsic and intrinsic cues, brands differ with regard to their packaging, in terms of colour, shape, material and letter font, for example (e.g. Kauppinen-Räsänen, 2014), which are herein referred to as packaging design cues.

2.2. Impact of packaging and products' extrinsic cues on consumer choices of high-risk products

When choice decisions involve a perception of risk, consumers commonly engage in information-sourcing behaviour as a means to reduce the sense of risk and increase the sense of trust (Bettman, 1979). This means that consumers search for product information for example on the Internet before making a brand choice. However, depending on the purchase situation, pre-information sourcing is not always possible. Langan et al. (2017) stress that consumers most likely use intrinsic cues to state a preference, as these cues are inherent to the product. However, in the case of the current study, consumers are likely to rely on extrinsic product cues. These cues are easier to interpret and understand than the inherent cues of pharmaceuticals, and indeed, they are found to be used to reduce the perception of risk (Tse, 1999).

Past research stresses the role of brand packaging as an extrinsic product cue and imply that packaging has an impact on evaluation, preferences and brand choices—not only for consumer goods in general—but also for pharmaceutical products (Huelck & Naik, 2004; Kauppinen-Räsänen et al., 2012; Paddison & Olsen, 2008). An essential notion is though that a number of cues are expressed on packaging, whereby packaging could also be viewed as a medium. As mentioned earlier, for pharmaceuticals, active ingredients and tastes are intrinsic cues, while extrinsic cues are brand name and price, but also producer's name and country of origin (e.g. Miyazaki et al. 2005). Kukar-Kinney and Xia (2017, p. 189) stress that extrinsic cues are those being 'external to the product/deal under the consideration, such as a contextual factor'.

Research has also concluded that consumers base their trust on the extrinsic and, in particular, use them to assess product quality. This means that these cues serve as heuristic knowledge; they reduce the effort that consumers face in a choice decision and facilitate easy brand evaluation and choices (Miyazaki *et al.*, 2005; Veale *et al.*, 2006). Such choice decision may for example be characterised by lack of time or unfamiliarity with the product class. Past research has found that the higher the price, the higher is the perception of product quality and product safety (e.g. Tse, 1999). Also, a product's brand name and country of origin influences how the consumer perceives the product's quality. On the one hand, Tse (1999) concluded that the most well-known brands are connected with the perception of higher product quality. On the other hand, Pecotich & Ward (2007) implied that consumers prefer national brands. This latter preference could also be explained by the effect of national products on the development of a nation's economy and employment.

Past research has also found that producers' reputation is an essential cue for evaluating the quality of a product and reducing the perception of risk (Purohit & Srivastava, 2001; Mitchell & Creatorex, 1989; Purohit & Srivastava, 2001; Srinivasan et al., 2004; Tse, 1999). In addition to conveying quality and trust, such extrinsic cues are used to make choices when the consumer is unable to evaluate a product based on its intrinsic cues. Furthermore, not only product illiteracy, but also health illiteracy may also explain consumer choices, which are based on such extrinsic product cues like reputation or image (Kauppinen-Räsänen, 2010; Sørensen et al., 2013).

With regard to packaging design cues, such as shape and colour, past studies have concluded that consumer preferences may be based on the appearance of the packaging or the cues that compose the physical appearance of the packaging (e.g. Kauppinen-Räsänen, 2014). While preference for certain design cues may be subjective and based on consumers' personal tastes, research has found that such preferences are not only subjective but also based on country-specific preferences (Kauppinen-Räsänen et al., 2012). For example, past studies have reported universal and country-specific rankings for colour and shape preferences. Further, research has found that these cues convey meanings like blue may convey high quality, while green may connote healthiness (Jacobs et al., 1991; Gimba, 1998). Yet, while an extensive body of research has found that these cues effect consumer choices with other consumer goods (e.g. Pantin-Sohier, 2009; Swahn *et al.*, 2012), only a few has studied the influence of packaging design cues for choices of OTC pharmaceuticals.

Still, those few that have done so have come to the conclusion that consumers' choices may be based on design cues for these products as well (Kauppinen-Räsänen, 2010; 2011; Kauppinen-Räsänen et al., 2012).

2.3. Cross-country evidence of the impact of packaging cues of OTC medicines

In a study on the packaging of OTC medicines across three countries (Finland, the US, Ghana), Kauppinen-Räsänen et al. (2012) found that for Finnish and American respondents, the producer played the most important role, followed by the colour, shape and letter font on packaging for painkillers. Ghanaians, on the other hand, most valued the colour of packaging for painkillers, followed by shape, producer and letter font. For cough medicine, the same study found that Finnish and American respondents rated the taste, an intrinsic quality, as the most important cue expressed on the packaging, followed by producer, colour, shape and letter font. Once again, Ghanaians perceived colour to be the most important attribute for this product class, followed by producer, packaging shape, taste of the medicine and letter font (Kauppinen-Räsänen et al., 2012).

The study by Kauppinen-Räsänen et al. (2012) further found that producers with a well-known reputation were favoured by Finns, Americans and Ghanaians. Interestingly, the Finns and Americans most valued well-known domestic producers for both product classes, which served as a common risk reduction cue (Pecotich & Ward, 2007; Yeung & Yee, 2003). Interestingly, the Ghanaians most valued known foreign producers, as foreign products potentially represented higher quality and convey safety. This conclusion is supported by the findings of other studies which imply that foreign products from more developed countries are favoured in less developed countries, since they are perceived to be of a higher quality and, therefore, to carry a lower risk (e.g. Josiassen et al., 2008; Okechuku & Onyemah, 1999; Pappu et al., 2007).

With respect to the other tested cues, Finns, Americans and Ghanaians similarly stated that they perceived colour to be the most important design cues for both product classes. For painkiller packaging, the Finns and the Americans preferred the colour blue, while Ghanaians had a preference for green. For cough medicines, the Finns preferred blue; Americans, green; and Ghanaians, red.

Packaging shape has also received some attention in past studies. In their study, Kauppinen-Räsänen et al. (2012) found that the Finns preferred more elongated packaging for the two tested product classes, while the American and Ghanaian samples showed no pattern in preferences for shapes. Previous research has confirmed the positive evaluation of elongated shapes based on the perception of greater volume (Raghubir & Krishna, 1999). Interestingly, the Ghanaian respondents preferred the elongated shape the least, while the American respondents preferred elongated packaging for painkillers and square packaging for cough medicine.

Letter font was the least valued attribute by all three samples for the evaluated product classes. Again, the Finnish and American samples expressed similar preferences. The study concluded that the conservative letter font was the most preferred, as consumers may consider fonts that convey tradition, familiarity and reliability as an indicator of quality and as a cue that reduced the sense of risk (Yeung & Yee, 2003). Ghanaians showed no coherent preference for the various letter fonts.

In sum, it is apparent that the influence of packaging is multitudinous: the right packaging attracts attention; sets off sensory stimuli; announces the brand, product and type of product; supplies information related to product use; and, as a consequence, influences consumers' behaviour (Kauppinen-Räsänen, 2012). In addition, the impact of packaging cues varies across countries, whereby country-specific research is called for. What more, qualitative research is called for to

explain the impact of various cues (e.g. Kauppinen-Räsänen, 2010; 2011; Kauppinen-Räsänen et al., 2012; Mukherjee, 2012).

3. Material and Methods

Inspired by the study of Kauppinen-Räsänen et al. (2012), this study's empirical design is based on conjoint analysis, which was designed as a stated preference (SP) experiment (Kim *et al.*, 2014). In addition to exploring the impact of packaging cues among Portuguese self-care consumers, this study aims to explain and understand the conjoint findings by qualitative data. Hence, a mixed methodology approach—based on a conjoint data collection method and qualitative interviews—was employed to explore how Portuguese self-care consumers evaluate the packaging of OTC pharmaceuticals.

INSERT FIGURE 1 HERE

3.1. Conjoint analysis

Conjoint analysis is a multi-attribute valuation technique. The basic idea behind CA is that products and brands are expressed through a number of cues or attributes, such as taste, brand name and price (e.g. Green and Srinivasan, 1990). Consumer preferences and potential choices are based on a consumer trading-off between these various cues and attributes.

Several various types of conjoint analysis exists, whereby several different techniques and methods can be chosen from in designing a conjoint study (Gustafsson et al., 2003). This study is designed using SPSS's orthogonal design and a full-profile method (FP). FP was used to define the experimental packaging profiles, which means that the studied cues or attributes (varying though on the level) are represented on each packaging profile. These profiles are used in collecting the data. In addition, the conjoint design includes an orthogonal design, which means that it estimates main effects only. Hence, it excludes interaction effects between the studied cues or attributes (Gustafsson et al., 1999). Notable is that would interaction effects be included in the study design, the number of profiles would increase (Green & Srinivasan, 1990). Further, the study design includes a fractional factorial design, which means that the number of profiles were reduced. Conjoint data can be choice-based or preference data. This study was designed to involve preference data, which means that the study was designed to determine consumers' preferences (from the most preferred to the least preferred).

One of the initial steps in designing a conjoint analysis is to select the studied cues and attributes. In the design phase of the conjoint model, the researcher identifies attributes and cues that can be assumed to have an impact on preferences. A good selection of attributes needs both to reflect consumers' preference properly and to be feasible. Preliminary data collection effort, questioning consumers about attributes considered important, usually helps in identifying those attributes that are most frequently regarded as relevant (Lee et al., 2000). Also, attributes that cannot be modified due to given constraints need to be excluded. In this study the selection of the packaging cues or attributes and the choice of the studied product classes were based on a literature review and a number of preliminary studies. In these studies pharmacists and consumers were consulted and interviewed, and a preliminary conjoint study was conducted to test the conjoint design.

The conjoint analysis was employed to evaluate the attributes of the two product classes. Specifically, packages for painkillers (including cues for country of origin and company reputation as well as packaging shape, colour and letter font) and for cough medications (including cues for country of origin and company reputation as well as packaging shape,

colour, letter font and taste) were designed to test the impact of extrinsic cues and packaging design cues on consumers' preferences.

For the country-of-origin and producer reputation cues, four options were provided: known domestic, unknown domestic, known foreign and unknown foreign. In terms of colour, the options were blue, green, yellow and red. For package shape, there were three possibilities: elongated, portrait and square. Lastly, the letter font was divided into three types: conservative, modern and neutral. For the cough medicine, taste, as displayed on the package, was also added, with four tastes available: menthol, honey and lemon, mint and neutral.

As a full profile design was used, the number of profiles was reduced by a fractional design (144 [for painkillers] and 576 [for cough medicines] profiles were reduced to 16 profiles). Due to the orthogonal design, the impact of the selected attributes was measured independently of each other (Gustafsson et al., 1999). Otherwise, the number of combinations would have been unmanageable for data collection purposes. The design was tested to ensure its functionality and to confirm that the cues conveyed the intended meaning. After the profile criteria were defined, the experimental packages were produced by a company that specializes in packaging. This means that hypothetical and experimental packages were used to collect the data. For this reason, brand name and price were excluded from the study.

In this study, 32 original packages were created and adapted to the Portuguese language. The packages were divided into two groups of 16 units each: the first (type 1) represented a painkiller and the second (type 2), a cough medicine. As previously described, the packages for each group were defined by distinguishable attributes.

SPSS was used for analysing the ranking data as well, which means that conjoint analysis was used to measure the weight consumers assign to the various cues as they state their preference. For this purpose the conjoint procedure and its related syntax were used, comprising the orthogonal design, which independently assessed the importance of each attribute (Gustafsson et al., 1999). As per the method used by Kauppinen-Räsänen et al. (2012), the simple average technique of the software was used to predict the impact of each attribute. This means that the software was used to estimate the part-worths of the attributes in accordance with the results of other studies (e.g. Hailu et al., 2009; Silayoi and Speece, 2007).

3.2. Qualitative study

To understand the respondents' preferences better, they were asked to state the reasons for their ranking. This means that qualitative data were collected simultaneously, as the respondents ranked the packaging profiles.

These data were analysed in relation to the tested attributes and their resultant ranking. Hence, the data analysis was conducted using an interpretive analytic method. Data were analysed using an iterative process, which meant going back and forth between the study design, empirical data and empirical findings (Miles & Huberman, 1984; Eisenhardt, 1989). We further used open coding to identify the concepts representing the major themes.

All interviews were recorded and transcribed. Conjoint data and interview data were collected face-to-face. One session took in average 30 minutes. During that time the respondents stated their preferences for the two product classes and expressed their motivations to the preference orders.

3.3. Sample

Data were collected from 60 respondents. The respondents were students or young consumers aged between 18 and 30 years. A non-probability sampling technique, convenience sampling, was used for this study since the interviews were

performed at university facilities with students who were available. The study analysed a homogeneous sample, as the focus was on packaging attributes (rather than preferences according to demographic characteristics). According to Malhotra (2008), the purpose of this technique is to obtain a convenient sample, wherein the selection of the sample is left to the discretion of the researcher, without any impositions or restrictions.

4. Results and Discussion

Below, the findings of the conjoint analysis and qualitative study are reported.

4.1. Results of the conjoint analysis

Using conjoint analysis, the impact of each attribute in relation to the others was quantitatively determined, as was its place in the overall ranking of attributes according to importance for consumer selection. Table 1 presents the results for painkillers and cough medicine.

The highest theoretical value of Kendall's tau coefficient is 1, which indicates perfect concordance of the profiles of the attribute combinations and the average rankings. Taking into account that the values obtained are somewhat high (0.883 and 0.950 for painkillers and cough medicine, respectively), it can be concluded that the study design was valid and that the product tests were correctly executed (Kauppinen-Räsänen et al., 2012).

INSERT TABLE 1 HERE

To begin with, the study found that the order of importance of the tested cues for the two product classes in the present Portuguese samples was the same as that for the Western and Ghanaian consumers reported in the study by Kauppinen-Räsänen et al. (2012). As shown in Table 1, for painkillers, the Portuguese respondents indicated that the producer plays the most important role (37.2%), followed by colour (30.2%), shape (22.2%) and letter font (10.3%).

With respect to ranking according to individual attributes, for the producer, the respondents showed a preference for known domestic brands, followed by known foreign, unknown domestic and, finally, unknown foreign brands. This finding implies that reputation is more important than the country of origin of the producer (Purohit & Srivastava, 2001; Mitchell & Creatorex, 1989; Purohit & Srivastava, 2001; Srinivasan et al., 2004; Tse, 1999). The colour blue was the preferred colour, followed by yellow, green and, lastly, red. Thus, Portuguese respondents preferred cool colours for painkillers. In terms of shape, elongated shape ranked first, followed by the portrait and square shapes. With regard to font preference, the sequence of preferences, from the most preferred to the least preferred, was as follows: modern, conservative and neutral.

The scores for cough medicine in Table 1 show that the respondents mostly focused on the intrinsic cue of taste (46.6%), which supports the claim by Langan et al. (2017) stressing that consumers most likely use intrinsic cues to state a preference. In this study the impact of taste was followed by a preference for colour (19.2%), producer (17.8%), shape (8.8%) and letter font (7.6%). In the analysis of the ranking of individual attributes for cough medicines, the scores imply that the most preferred taste is menthol, followed by the combination of honey and lemon, mint and, lastly, neutral flavour. With regard to the colour, green is the preferred colour, followed by blue, yellow and, once again, in last place, the colour red. As for painkillers, cool colours are preferred. The order of choice of producer remains nearly the same as that for painkillers: known domestic, unknown domestic, known foreign and unknown foreign. Also this findings is supported by past research implying that reputation may be used as a risk reducing cue (e.g. Purohit & Srivastava, 2001; Mitchell & Creatorex, 1989). With regard to shape, the order of preferences, from the most preferred to the least

preferred, is the same for both product classes: elongated, portrait and square. However, preferences for letter font vary slightly: the conservative style was chosen over modern and neutral styles.

In order to gain further insight into the reasons for the respondents' preferences, the study also collected qualitative interview data.

4.2. Results from the qualitative study

The qualitative findings provide the reasons for the respondents' preferences and are summarized in Table 2. The findings show how the explanations varied across the various cues. This implies that intrinsic and extrinsic product cues and packaging design cues serve various functions when consumers state a preference. However, the explanations (except for taste included only for cough medicine) did not vary across the two product classes, whereby the findings across the two product classes are summarised in a single table. Notable is also that font letter triggered very few spontaneous comments, although it should not be assumed that font letter is not essential for consumer choices.

INSERT TABLE 2 HERE

The qualitative data show, on the one hand, that national (domestic) producers are preferred because they convey greater trust. Likewise, foreign producers that were well known were preferred for the same reason. These findings support past studies (Purohit & Srivastava, 2001; Mitchell & Creatorex, 1989; Purohit & Srivastava, 2001; Srinivasan et al., 2004; Tse, 1999). In a similar vein, foreign producers that were not well known were less preferred as they conveyed mistrust. The respondents also explained that they would prefer national brands in order to benefit the national economy, development and employment. This finding implies a sense of personal and social responsibility. With regard to reputation, the respondents pointed out the following:

Unknown producers do not convey trust.

It's too risky to choose unknown producers.

These quotes show how reputation is an essential cue for the selection of OTC medicines.

Furthermore, the findings of the current study indicate that the choice of OTC medicines involves a perception of risk, wherein domestic producers with well-known reputations are preferred (Mortanges et al., 1997). Hence, familiarity guides brand choice. In the case of painkillers, the preference for known producers, first domestic and then foreign, is in accordance with the conclusions of Pecotich & Ward (2007), who found that the producer's name and the product's country of origin influence the perception of quality and influence consumers' brand choices, wherein national brands are the most preferred. On the other hand, Tse (1999) concluded that more well-known brands are associated with a higher degree of product security, which is also notable in the ranking results of the present study. Interestingly, ethical values such as responsibility also played a role in the preference for OTC medicines, as some respondents stressed on their desire to support local production.

The qualitative data for colour, in particular, highlight the essence of cue congruence. Here, it is expressed by the congruence between the cues product class and product use. This means that consumers expect a fit between the colour of the packaging and the type of product and the use of the product. Our findings also show how consumers expressed the incongruence of cue combinations. Based on their results, Kauppinen-Räsänen (2010) concluded that colour is the packaging design cue that most strongly influences the choice of non-prescription medicines; this is in agreement with

the results of the present study. In addition, the current study's findings indicate that blue is the most preferred colour for painkiller, while red is the least preferred colour for both product classes, as expressed in the quotes below:

I look for blue when I have a headache, as it relieves.

I do not associate red with medicine.

Schmitt & Simonson (1997) explain that cool colours, including cool blues and greens, are associated with calmness and tranquillity, while red is a hot colour that conveys excitement and power. Thus, these findings imply that cool colours are preferred by someone who is in pain (head and/or throat).

The qualitative data on shape also demonstrated the importance of cue congruence and incongruence. In this respect, Schmitt & Simonson (1997) affirm that the power of shapes in aesthetic strategy essentially lies in their capacity to distinguish, as certain shapes may be exclusively associated with certain companies or brands as well as represent a sort of inherent quality. The collected data highlight the need for consumers to associate shape with a particular product.

I do not associate the portrait shape with medicine packages.

The square shape reminds me of packs of cigarettes.

For both painkillers and cough medicine, the respondents' choice leaned toward the elongated shape, which is the most commonly used shape for medicine packaging in Portugal. Yet, some respondents also liked the square shape, for example, as it brought a sense of newness to the OTC packaging implying the essence of packaging design for variety seeking self-care consumers:

I like the square shape because it is different than usual.

Some also pointed out the functional value of packaging shape.

The importance of taste was expressed based on its congruence with the product class, which implies that the taste would have to fit the product class. Also, the essence of the sensory experience was stressed on, which means that the taste would have to be pleasurable. Yet, when it comes to taste, the importance of taste-colour congruence or cue combination congruence was also stressed on. This means that the colours on the packaging should convey some information about the intrinsic nature of the product, which, in this case, is the taste of the cough medicine.

In order to answer the research questions described in this paper, the findings are summarised in the figure 2 below. The figure attempts to show how various cues expressed on packaging for healthcare products can be utilised by packaging designers and pharmaceutical marketers to add value at the point of purchase. These cues serve various functions and convey various interpretations like trust or product class fit. As these functions and interpretations influence consumers' preferences before choices are made, the businesses benefit from acknowledging that these cues are not merely for rational and aesthetic purposes.

INSERT FIGURE 2 HERE

5. Conclusions and implications

As the healthcare market and industry are transforming, so are consumers' health behaviour. One topical issue is that the contemporary consumer is increasingly triggered by health issues and the maintenance of good health. In this respect, consumers want to control and maintain their own health, and concerns over one's health. Hence, the purchase of health products—self-care and self-medication products—are now driving consumption. Evidently, this involves many issues and potential products. The present study focused on consumers' choice of self-medication and non-prescription medicine.

Specifically, the aim of this study was to provide some insight into how self-care consumers evaluate OTC packages. In particular, this study explored how Portuguese consumers evaluate extrinsic product cues such as producer reputation and country of origin, as expressed on the packaging, in addition to packaging design cues such as colour, shape and letter font. Finally, for cough medicine, the importance of the intrinsic characteristic of taste was also evaluated.

This study contributes to the field of packaging design and pharmaceutical marketing by providing insights into the role of packaging design in the brand choices of self-care consumers. To begin with, the study contributes to the fields of packaging design and pharmaceutical marketing by showing in a single study the impact of extrinsic products cues and packaging design cues for two product classes for Portuguese consumers. Second, the study provides explanations therein. Thus, the conjoint findings reveal that the Portuguese respondents value most producer information for painkillers and taste for cough medicine; these being followed by colour and shape versus colour and producer respectively. The conjoint findings are explained by qualitative findings and show, for example, how the product class fit and sensory experiences are important for stating a preference for taste. The respondents also stressed the essence of cue combination fit, which means that the various cues could—in combination—convey trustworthiness, if there was a logic fit between the cues, like taste and colour. Further, the findings show in agreement with past research that producer reputation and country of origin are influential cues because they may convey a sense of trust (e.g. Pecotich & Ward, 2007; Tse, 1999). Trust is an essential aspect of medicine choice, as it reduces the sense of product risk. Yet, the current study also shows that consumers' choices may be based on the country of origin because it may convey responsibility. Respondents also explained the importance of producer reputation by risk avoidance. For example, unknown producer could—not only be perceived as risky—but also convey mistrust. Further, the study's findings show how product packaging communicates with and influences consumers through design cues such as colour and shape. For example, the cool colour of blue was perceived as calming in the current study context and not necessarily high quality (Jacobs et al., 1991; Kauppinen-Räsänen and Luomala, 2010). An interesting finding was that consumers look for signs of trust in these cues as well. Trust was conveyed in form of fit; product class fit, product use fit and cue combination fit. Yet, the design cues also signal the core product and its reputation, which have an impact on product evaluation and, evidently, on brand choices. Finally, the current study's findings imply that packaging cues indeed are context-related. The findings of this study had similarities and dissimilarities with the study by Kauppinen-Räsänen et al. (2012) and show the essence of—not only understanding country-related consumer behaviour and markets—but also product class-related impact of cues expressed on packaging.

In Portugal, non-prescription medicines are available outside pharmacies, namely, at parapharmacies and large commercial stores. These shopping environments and retail stores lack pharmaceutical professionals who can guide, advice and assist consumers in making knowledge-based and rational and cognitive product choices or in taking positive health actions, or, in other words, in choosing a product based on its intrinsic cues. Evidently, this is a challenge for consumers, particularly for those lacking health knowledge and product knowledge, as the consumer must be able to control and manage the act of self-medication and is also responsible for the choosing the proper OTC medicines. This

presents a paradox in this era of health empowerment, as consumers are expected to be responsible for their health and to take on the responsibility of practicing self-medication for their own health.

In conclusion, the study contributes not only to the academic discussion, but also to practice. It does so by providing exploratory understanding of the impact and function of packaging and its various cues for high-risk products such as non-prescription medicines. As mentioned, these cues add value at the point of purchase, and understanding the impact of such cues is responsible brand promotion and product communication. Only by understanding these cues can businesses and industry ensure good self-care and safe self-medication, which would preserve and further the goal of self-care, or care for one's own health.

5.1. Limitations and future directions

This study is exploratory in nature, and therefore, does not allow for hypotheses or prediction of an ideal combination of attributes or provide any suggestions for the packaging of non-prescription medicines. Instead, it attempts to raise an essential issue that deserves attention in future research. Hence, future research could include more attributes and product classes for prediction purposes, for which conjoint analysis is highly suitable. In addition, more qualitative insights into the impact of various packaging cues could be gained from focus group interviews, which again could involve more product classes. Evidently, demographic characteristics could be investigated, so this study could be expanded by considering participants of different genders, age groups, educational areas and social classes. In addition, various health-related lifestyles and health knowledge and involvement could be investigated further to understand the role of packaging and in-store brand choices.

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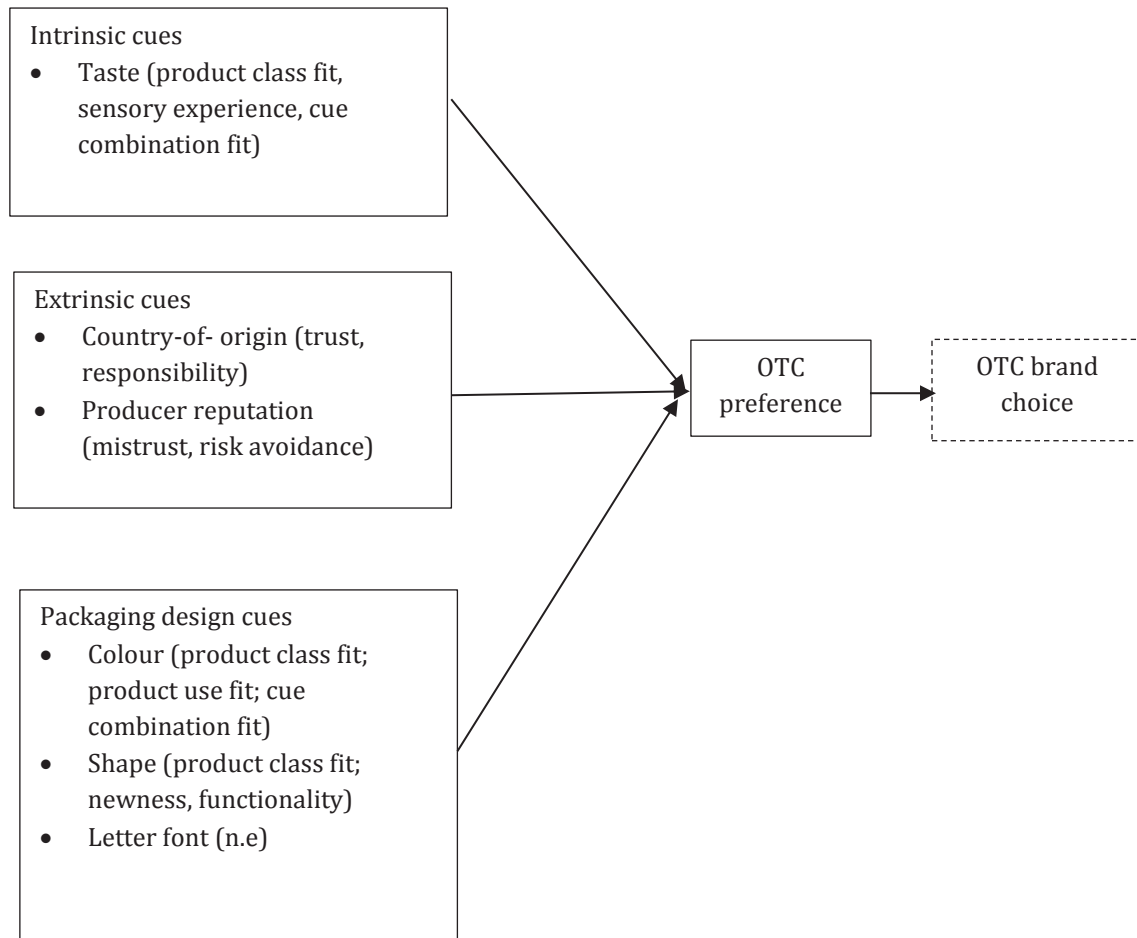
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Figure 1 – Study design

Packaging cues	Intrinsic cues <ul style="list-style-type: none">• taste
	Extrinsic cues <ul style="list-style-type: none">• Country-of- origin• Producer reputation
	Packaging design cues <ul style="list-style-type: none">• Shape• Colour• Letter font

Figure 2 – The added-value functions of cues expressed on packaging



n.e. = no explanations

Table 1 – Relative importance and utility scores of different packaging cues of painkiller and cough medicines

Attribute	Level	Painkiller		Cough medicine	
		Utility	Relative importance (%)	Utility	Relative importance (%)
TASTE	Menthol			2.142	
	Honey and lemon			1.542	46.5
	Mint			-1.321	
	Neutral			-2.363	
COLOUR	Blue	1.271		0.429	
	Green	0.171	30.2	0.854	19.2
	Yellow	0.2		0.304	
	Red	-1.642		-1.587	
SHAPE	Elongated	1.172			
	Portrait	-0.119	22.3	-0.142	8.9
	Square	-1.053		-0.308	
FONT	1 (conservative)	0.225		0.214	
	2 (modern)	0.294	10.3	0.17	7.6
	3 (follower)	-0.519		-0.3842	
PRODUCER	Known domestic	2.575		1.308	
	Unknown domestic	-1.429	37.2	0.429	17.8
	Known foreign	1.329		0.342	
	Unknown foreign	-2.475		-1.221	
	Pearson		0.994		0.999
	Kendall's tau		0.883		0.950

Table 2 –Qualitative evaluation of packaging cues

Packaging cue	Explanatory dimension	Respondents' excerpts	
PRODUCER	Trust	'I prefer a known domestic producer because it's more trustworthy.' 'I prefer a known foreign producer because it's more trustworthy.'	
	Responsibility	'I choose a domestic producer to help our country's economy.' 'I choose a domestic producer to promote employment in our country.'	
	Mistrust	'Unknown producers do not inspire trust.'	
	Risk avoidance	'It's too risky to choose unknown producers when choosing medicines.'	
COLOUR	Congruity	Cue: product class	'I associate the colour blue with medicine.'
		Cue: product use	'The colour blue is soothing, and it's what I would look for if I had a headache.'
	Incongruity	Cue: product class	'I do not associate the colour red with medicines.' 'I do not associate the colour yellow with medicines.' 'The colour yellow is too cheerful and light, so it's not suitable for medicines.'
		Cue: product use	'Instead of making me feel better, the colour red gives me headaches. I would never choose it.'
		Cue combination fit	'I do not associate the colour with the taste. It's confusing.'
SHAPE	Congruity	Cue: product class	'I associate the elongated shape with medicine packages.'
		Cue: product class	'I do not associate the square shape with medicine packages.' 'I do not associate the portrait shape with medicine packages.' 'The square shape reminds me of a pack of cigarettes.'
	Newness	Functionality	'I like the square shape because it is different than usual.' 'The square shape is more practical to carry around in my pocket.' 'The elongated shape is more practical to carry in my shoulder bag.'
		Functionality	
TASTE	Congruity	Cue: product class	'I associate menthol with freshness, so it's my favourite taste for cough medicine.' 'I associate the honey and lemon taste with cough medicines because it's sweet and fresh at the same time.'
		Cue: product class	'I do not associate the honey and lemon taste with cough medicines.' 'I do not associate mint with cough medicines.' 'Menthol tastes like gum, not medicine.'
	Sensory experience	Cue combination fit	'Cough pills usually have taste—that's why I would never choose a neutral taste.'
		Cue combination fit	'I do not associate the colour with the taste. It's confusing.'